

2000-0015-06
USSN 10/670,406IN THE SPECIFICATION:

Please amend the specification as follows according to paragraph designations in the above captioned application as published:

[0017] FIGS. 6A and 6B show how bandwidth and wavelength are is calculated.

[0022] FIGS. 12, 12A, 12B, 12C and 12B D show a proposed technique for providing fast and finer wavelength control.

[0023] FIGS. 13A and B show further embodiments of a mirror design a heat exchanger design for producing differing laser gas temperature regions in the laser chamber.

[0088] The algorithm outlined in FIG. 12D provides pulse-to-pulse control of the laser wavelength permitting next pulse correction using the very fast mirror design shown in FIGS. 13A, ~~13B~~ and ~~13C~~ 13B. The algorithm as described in FIG. 12D awaits completion of a pulse N which it redefines as pulse N-1. It measures the wavelength of the pulse, compares it with a target pulse and moves stacks 88A, 88B and 88C or stack 88A to provide the desired wavelength correction. All of this is done prior to pulse N so that the mirror is moved and is stationary at the time of pulse N. If any of the stacks are outside of its 30% to 70% range, the stepper motor makes a step. The algorithm will then cause the out of range stack to move back within the 30% to 70% range. The positions of the stacks are based on their control voltage. The algorithm could be modified so that no piezoelectric adjustment is made if the absolute value of $\delta + \Delta\lambda E$ is less than a specified small value such as 0.01 pm which is 20% of one specification value for wavelength variation.

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[0089] The embodiments described above can be used for purposes other than chirp corrections. In some cases the operator of a integrated circuit lithography machine may desire to change wavelength on a predetermined basis. In other words the target wavelength λ_T may not be a fixed wavelength but could be changed as often as desired either following a predetermined pattern or as the result of a continuously or periodically updating learning algorithm using early historical wavelength data or other parameters.